

Exhibit

A

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

UBIQUITI NETWORKS, INC.,

Plaintiff,

v.

CAMBIUM NETWORKS, INC.;
CAMBIUM NETWORKS, LTD.;
BLIP NETWORKS, LLC;
WINNCOM TECHNOLOGIES, INC.;
SAKID AHMED; and
DMITRY MOISEEV

Defendants.

Civil Action No.: 1:18-cv-05369

JURY TRIAL DEMANDED

**DECLARATION OF MICHAEL T. FENN, JR. IN SUPPORT OF
UBIQUITI'S MOTION TO LIFT THE STAY ON DISCOVERY**

I, Michael T. Fenn, Jr., declare as follows:

1. I have been retained as an expert by counsel for Plaintiff Ubiquiti Networks, Inc. ("Ubiquiti") in the above-captioned matter and I have prepared this declaration at their request.

2. I am employed by Aon Intellectual Property Solutions ("Aon"). Aon is being compensated for my work in this matter based upon an hourly billing rate of \$477. My compensation, and that of Aon, is in no way contingent upon the opinions expressed herein or upon the outcome of this matter

Qualifications

3. I received a Bachelor of Science degree in Electrical and Computer Engineering from Cornell University in 2004, concentrating in Computer Engineering and taking various courses in Computer Science. Prior to my graduation, I accepted a position as an Electrical Engineer with Raytheon Integrated Defense Systems in Sudbury, MA and was awarded a

Raytheon fellowship for graduate studies, through which I received a Master of Science degree in Electrical and Computer Engineering from the University of Massachusetts at Amherst in 2006, concentrating in Signal Processing and Communications.

4. At Raytheon, I developed and architected software – as both an individual developer and as a technical lead – for real-time radar signal processing and adaptive digital beam-forming for multiple large phased-array missile-and-air defense radars.

5. I additionally spent time at Raytheon as a Systems Engineer, developing and modeling novel radar data processing algorithms and writing formal software requirements to dictate the implementation of those algorithms by a team of software developers. I also served as technical lead to the team of systems and software engineers.

6. In my current position as a Vice President at Aon Intellectual Property Solutions – and in my prior positions as a Vice President in the Intellectual Property practice of Stroz Friedberg, which was acquired by Aon in 2016, and as a Computer Scientist at Elysium Digital, which was acquired by Stroz Friedberg in 2015 – I have served as a consulting or testifying expert on approximately 50 matters, the majority of which concerned intellectual property disputes regarding software. In these matters, I have frequently analyzed the development history and provenance of software and firmware source code. I have also analyzed the source code of numerous software projects that incorporate varying quantities of source code licensed as open source under Open Source Initiative approved licenses.

7. I am also a certified GIAC Certified Forensic Examiner and have performed various types of computer forensic analyses in several matters during my time at Aon, Stroz Friedberg, and Elysium Digital.

8. I have submitted expert reports, declarations, been deposed, and testified in court as an expert on both software and firmware, as described in the true and correct copy of my Curriculum Vitae, attached to this report as Exhibit A.

Scope of Work and Materials Relied Upon:

9. I have been requested by counsel for Ubiquiti to review the declaration submitted by Jeff Fischer on behalf of Defendants to determine whether the opinions contained therein are reasonable and supportable by the information reviewed by Jeff Fischer.

10. In performing this task, I obtained or was provided the following:

- a. The Declaration of Jeff Fischer in Support of Defendants' Motion to Dismiss the First Amended Complaint ("Fischer Declaration"), including all exhibits;
- b. The Ubiquiti First Amended Complaint;
- c. The Ubiquiti GPL Archive for GPL.UBNT.v6.1.7; and
- d. The Ubiquiti SDK for Ubqituit's AirOS operating system – AirOS 5.2 (SDK.UBNT.v5.3.tar.bz2); AirOS 5.3.3 (SDK.UBNT.v5.3.3.tar.bz2); and AirOS 5.5 (SDK.UBNT.v5.5.tar.bz2) (collectively the "Ubiquiti SDKs").

Detailed Statements of Opinions and Findings:

11. It is my opinion that Mr. Fischer reached a number of incorrect conclusions in his declaration based on: (1) a lack of sufficient information; (2) erroneous assumptions; and (3) an incomplete analysis. My review of the Fischer Declaration is ongoing and this declaration does not contain all of my opinions or criticisms with respect to the Fischer Declaration.

Insufficient Information

12. Mr. Fischer states his task was to opine on whether source code identified by Ubiquiti in the First Amended Complaint are the same or similar to files contained in "any open source or GPL archived file" released by Ubiquiti. (Fischer Decl. ¶11). Performance of this task would require a comparison of the text of the source code identified by Ubiquiti with the text of

the source code otherwise released by Ubiquiti under an open source license, such as the GNU Public License (GPL). A fundamental and necessary input of this comparison is the source code for the software or firmware modules identified by Ubiquiti in the First Amended Complaint. Mr. Fischer admits he did not have this information available and instead relied solely on the names of the files and the functionality ascribed to them in the First Amended Complaint. (Fischer Decl. ¶26). Without the actual underlying source code that constitutes those modules, it is impossible to opine to a reasonable degree of certainty that the actual contents are identical, similar, derivative, or otherwise comparable to any other extent.

Incorrect Assumptions

13. Due to the lack of the actual source code, Mr. Fischer simply took the names of the code modules identified in the First Amended Complaint and searched for files in the SDK that contain the same or similar names. (Fischer Decl. ¶¶27-42). In doing so, he incorrectly assumed that the presence of a similar name or portion of a name meant that the underlying files were a “match” or “likely match.” Even if taken as merely a first step, no reasonable expert in this field would rely on such an assumption without later confirming its accuracy with deeper analysis. Moreover, this assumption is demonstrably false, as shown by the following examples:

- The Amended Complaint identified a file “ubntconf cl.sh.” This is a shell scripting file, as indicated by its “.sh” file extension. Mr. Fischer points to a file “ubntconf” as the “match.” (Fischer Decl. ¶32). However, the file identified by Mr. Fischer is a binary executable file called by the scripting file, not the scripting file itself;
- The Amended Complaint identified a package “ubnt-3g”. Mr. Fischer searched the SDK and found another filename containing the characters “3g” and states that the “match” is a file called 30-3g. (Fischer Decl. ¶33); and
- The Amended Complaint identified a package “ubnt-poe-control”. Mr. Fischer assumes “poe” means “Power over Ethernet” (PoE) and identifies the “likely match” as file called “advanced.cgi” because it contains part of the *user interface* for turning on PoE. (Fischer Decl. ¶42). However, this is not a “match” and the file identified by Mr. Fischer is not the code for *implementing* the actual low-level PoE

functionality, only the user interface to turn it on. This is analogous to claiming that disclosing a light switch is the same as disclosing all of the interconnected wiring hidden in the walls and circuit panel.

14. Mr. Fischer also incorrectly assumes that the presence of a compiled module in Ubiquiti's SDK means that the file is licensed under the GPL. (Fischer Decl. ¶20). To the contrary, as set forth in Exhibit A to Fisher's own declaration, only "*some* of the software in the firmware is licensed under the GNU General Public License and other Open Source and Free Software licenses. You can find the complete and corresponding source in our SDK." (Fischer Decl., Ex. A, emphasis added). Thus, it is wrong for Mr. Fischer to conclude: (1) for modules where Ubiquiti has included only the compiled object code (*i.e.* the constituent source code is not included in the SDK), that the entirety of its corresponding source code is covered by the GPL; and (2) that source code present in the SDK that does not explicitly say it is released under the GPL, is nonetheless under the GPL. No reasonable expert would have arrived at these conclusions reached by Mr. Fischer. Additionally, I note that even if a given compiled software or firmware module was built using *some* GPL-covered code, it is not necessarily true that *every* constituent source code file is covered by that same license.

15. Mr. Fischer also incorrectly assumes that the presence of a similar file in the SDK, even if it was covered by the GPL, means that a different file asserted in this case is also covered by the GPL. While it is my understanding that releasing a file under the GPL means that someone *else* using that file agrees to also release under the GPL any derivatives of that file they create, Mr. Fischer does not point to any section of the GPL that obligates the Licensor (here Ubiquiti) to release all future derivatives of its *own* work under the terms of the GPL. Thus, if Ubiquiti released its own works under the GPL (not work Ubiquiti itself bases on code developed by others that Ubiquiti received under the GPL), the mere fact that Mr. Fischer can point to a prior version being

released under the GPL does not lead to his conclusion that a later version released by Ubiquiti must also be released under the GPL.

16. Mr. Fisher's Declaration fails to provide any basis for concluding any of the files identified in the Amended Complaint were written by Ubiquiti based on code Ubiquiti received under the GPL. That is, Mr. Fischer does not identify any *third-party* GPL code used by Ubiquiti in any of the files identified in the First Amended Complaint. Thus, it is incorrect for Mr. Fischer to conclude that the presence of a similar file in the SDK, even if covered by the GPL, means that all derivatives of those files are also covered by the GPL. No reasonable expert would have reached this conclusion based on the information available to Mr. Fisher.

Incomplete Analysis

17. Mr. Fischer also appears to erroneously conflate object code with source code. In regard to various source code modules identified in the Amended Complaint (such as `ubnt-spectral`, `ubnt-spectral-2`, `ubnt-poll`, and `ubnt-regd`), Mr. Fischer identifies as a "match" or "likely match" compiled object code with similar names found in the SDK (*e.g.* `ubnt_spectral.ko`, `ubnt_poll.ko`, and `regdomain`). (Fischer Decl. ¶¶29, 30, and 41). With respect to `regdomain`, Mr. Fischer states that he only found the object code which he simply assumes, without any sufficient basis for doing so, must be based on the same source code as `ubnt-regd` despite the difference in the names. (Fischer Decl. ¶41). However, it is well-known that object code is not source code; source code is human-readable code written by developers, while object code is largely unreadable code generated through the compiling of that source code. To the extent that Mr. Fischer merely meant to imply that the presence of the compiled object code in the SDK means that constituent source code is covered under the GPL, this is also incorrect for the reasons I have stated above. *See supra* ¶14.

18. Mr. Fischer does not identify any source code in the SDK that is similar or a “match” to the source code identified by Ubiquiti. Not only does Mr. Fischer not have the source code for the code identified in the First Amended Complaint, as discussed above, Mr. Fischer also does not have the source code for the object code files he has identified in the SDK. Mr. Fischer does not even do a comparison of the object code of these files to say they are the same unreadable object code. Nonetheless, he opines to a reasonable degree of expert certainty that “[i]t is my opinion that the source or object code for all of these components or for substantial parts of these components, is included in Ubiquiti’s Open Source Archives.” (Fischer Decl. ¶24). This opinion is unfounded, and no reasonable expert would have reached this conclusion based on the information available to Mr. Fisher.

19. Mr. Fischer also states he has “done global file searches in the asserted components of the Ubiquiti Open Source Archives and found no place where Ubiquiti lays claim to a license for any of the work in these files other than the GPL” and with respect to each file he identified in the SDK that he has found “no alternative separable license.” (Fischer Decl. ¶43 and Exhibit D). However, Mr. Fischer’s “search” was clearly lacking in diligence. For object code included by Ubiquiti in the SDK, Mr. Fischer, as an expert in this field, could have searched for strings (*e.g.* using the standard Unix tool “strings”) within the object code to determine whether that object code file identified what license was applicable to that file. This would be especially prudent in light of the express statement by Ubiquiti in Exhibit A of Fischer’s Declaration that only *some* items in the SDK are covered by the GPL. Such an analysis would have informed Mr. Fischer that numerous object code files he identifies expressly state that are proprietary to Ubiquiti, and thus not released under the GPL – nor are their constituent source code files released under *any* open

source license. For example, the output of the “strings” tool for “ubnt_spectral.ko” in the SDK identified by Mr. Fischer shows:

```
...
license=Proprietary
description=Ubiquiti Spectral Analysis Module
author=Ubiquiti Networks, Inc.
...
```

20. In contrast, the “strings” output for a GPL-licensed object code file (SDK.UBNT.v5.3.3/openwrt/package/ubnt-base-files/files/lib/modules/2.6.15-5.2/wlan_leds_print.ko) in the SDK shows the following:

```
...
license=GPL
description=Signal display (printk) module for madwifi
author=UBNT, kaleda
...
```

21. Similarly, While Mr. Fischer cites to examples of certain files in the SDK that declare that they are licensed under the GPL, he ignores the examples that claim otherwise. For example, while at ¶20 of the Fischer Decl., Mr. Fischer cites to one “makefile” (SDK.UBNT.v5.3/openwrt/package/ubnt-base-files/makefile) to advance his opinions he ignores another makefile (SDK.UBNT.v5.3/openwrt/package/ubnt-web/Makefile) that omits any similar statement regarding the application of the GPL, which asserts only:

```
#
# Copyright (C) 2007 Ubiquiti Networks, Inc.
#
```

While Mr. Fischer asserts that "it is not sufficient to state an alternative license in a file header; it must also stand the test of not being a derivative work[,]" Mr. Fischer has conducted no such tests himself as he has not compared any source code files in such a manner. (Fischer Decl. ¶20).

22. For all of the reasons stated above, no reasonable expert would have reached Mr. Fischer's conclusions based on the information available to Mr. Fisher.

23. I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 15th day of July, 2019

A handwritten signature in black ink, appearing to read "Michael T. Fenn, Jr.", with a stylized, cursive script.

Michael T. Fenn, Jr.

Exhibit

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STROZ FRIEDBERG
an Aon company

CURRICULUM VITAE

Michael T. Fenn

Vice President

Boston, Massachusetts

E mfenn@strozfriedberg.com

T +1 617.807.8554

53 State Street, Suite 2201, Boston, MA 02109

PROFESSIONAL EXPERIENCE

STROZ FRIEDBERG, LLC

Vice President

2018 to Present

STROZ FRIEDBERG, LLC

Director

2015 to 2017

ELYSIUM DIGITAL, LLC

Computer Scientist

2011 to 2015

RAYTHEON COMPANY

Senior Electrical Engineer II (Systems and Software Engineering)

2004 to 2011

ABIOMED, INC.

Software and Electronics Engineering Co-op

2002 to 2003

EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST

M.S., Electrical and Computer Engineering, 2006

Thesis: "Radar Signal Processing: Implementation for High Performance"

CORNELL UNIVERSITY

B.S., Electrical and Computer Engineering, 2004

CERTIFICATIONS

Certified Forensic Examiner, GIAC, 2015

STROZ FRIEDBERG
an Aon company

CURRICULUM VITAE

Michael T. Fenn

Vice President

Boston, Massachusetts

E mfenn@strozfriedberg.com

T +1 617.807.8554

53 State Street, Suite 2201, Boston, MA 02109

TRAINING

THE SANS INSTITUTE

SEC575: Mobile Device Security and Ethical Hacking, 2017

FOR408: Windows Forensic Analysis, 2015

TESTIMONY

2019, 2018: *Blattman et al. v. Siebel et al.*

U.S. District Court, District of Delaware, Case No. 1:15-cv-00530

Testified as expert witness at trial, was deposed, and submitted two expert reports on behalf of Eric Blattman (represented by Williams & Connolly) in a contract dispute involving software assets transferred in a company acquisition.

2018: *1-800-REGISTRY, LLC et al. v. Teamvvork, LLC et al.*

Eighth Judicial District Court, Clark County, Nevada, Case No. A-17-763044-B

Was deposed and submitted two expert reports on behalf of The Chapel LLC (represented by Flangas Dalacas Law Group and Quinn Emanuel Urquart & Sullivan) in a trade secret matter involving web site technology.

2018: *SoCal Diesel, Inc. v. Extrasensory Software, Inc.*

Superior Court of California, Los Angeles County, Case No. BC597857

Testified as expert witness at trial and was deposed on behalf of SoCal Diesel, Inc. (represented by Hacker Law Group) in a trade secret matter involving engine control module technology.

2015: *SafeNet, Inc. v. Uniloc USA, Inc. et al.*

U.S. District Court, Eastern District of Texas, Case No. 6:15-cv-00097

Submitted declaration on behalf of Safenet, Inc. (represented by Fish & Richardson) in a patent matter involving the alleged failure to mark software licensing administration products.

2014: *L-3 Communications Corporation et al. v. Jaxon Engineering & Maintenance, Inc. et al.*

U.S. District Court, District of Colorado, Case No. 1:10-cv-02868

Was deposed, submitted expert reports, and submitted declaration on behalf of Jaxon Engineering & Maintenance, Inc., et al. (represented by McKenna Long & Aldridge) in a matter involving trade secret misappropriation allegations concerning software that measures electromagnetic shielding effectiveness.

2013: *Zettaset, Inc. v. Intel Corporation*

Superior Court of the State of California, County of Santa Clara, Case No. 1:13-cv-254447

Was deposed and submitted declaration on behalf of Intel Corporation (represented by Williams & Connolly) in a matter involving trade secret misappropriation allegations regarding fault tolerance in Hadoop distributed computing software.

STROZ FRIEDBERG
an Aon company

CURRICULUM VITAE

Michael T. Fenn

Vice President

Boston, Massachusetts

E mfenn@strozfriedberg.com

T +1 617.807.8554

53 State Street, Suite 2201, Boston, MA 02109

AWARDS AND RECOGNITION

Raytheon Fellowship for Advanced Study, University of Massachusetts Amherst

02/19